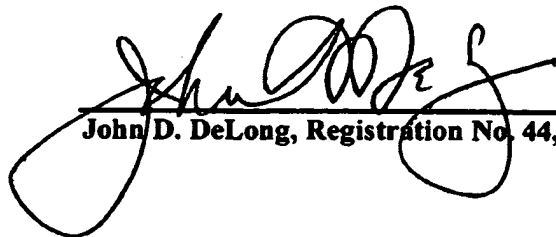


09/912,865



# APPELLANT'S BRIEF AND APPENDICES

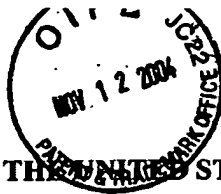
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Board of Patent Appeals and Interferences, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, Virginia 22313-1450, on the 10<sup>th</sup> day of November, 2004.

  
John D. DeLong, Registration No. 44,648



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(IFW/AF

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: )  
Georges Marcel Victor Thielen )  
For: RUNFLAT TIRE HAVING A )  
RUBBERIZED INSERT CONTAINING )  
1,6-BIS(N,N'- )  
DIBENZYLTHIOCARBAMOYLDITHIO)- )  
HEXANE )  
Serial No.: 09/ 20/912,865 )  
Filed: July 25, 2001 )

Docket No.: DN2000147  
Art Unit: 1733  
Examiner: Justin R. Fischer

**BEFORE THE BOARD OF PATENT  
APPEALS AND INTERFERENCES**

Board of Patent Appeals and Interferences  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**APPELLANT'S BRIEF**

Dear Sir:

Appellant, by virtue of his Notice of Appeal filed August 12, 2004, hereby files his Brief in response to the Final Rejection of all pending claims in the above-identified application. Please charge my Deposit Account No. 07-1725 in the amount of Three Hundred Forty and 00/100 Dollars (\$340.00) to cover the fee for filing this Brief in support of this Appeal. Any deficiency or overpayment should be charged to this Deposit Account.

**Real Party in Interest**

By virtue of an Assignment dated June 12, 2001, by the named inventors, the real party in interest is The Goodyear Tire & Rubber Company. The June 12, 2001, Assignment has not been recorded in the U.S. Patent and Trademark Office.

**Related Appeals and Interferences**

Appellant is not aware of any appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending Appeal.

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### **Status Of The Claims**

Claims 1, 4-6, 8-14 and 17 stand rejected and are subject to this Appeal. A copy of claims 1, 4-6, 8-14 and 17 appear in the Claims Appendix of this Brief.

### **Status Of Amendments**

No Amendment after Final Rejection under 37 C.F.R. 1.116 was filed.

### **Summary Of The Claimed Subject Matter**

The present invention relates to a runflat tire which is comprised of a generally toroidal-shaped carcass with an outer circumferential tread-two spaced beads, a radial ply structure extending from bead to bead and sidewalls extending radically from and connecting said tread to said beads, wherein said tread is adopted to be ground contacting and said sidewalls contain at least one insert radically inward from said ply and wherein the insert is comprised of a rubbery polymer and 1,6-bis-(N,N'-dibenzylthiocarbamoyldithio) hexane.

(Page 5, Lines 9 through 15).

### **Grounds of Rejection to be Reviewed on Appeal**

The first issue before the Board of Patent Appeals and Interferences is whether claims 1, 4-6, and 8-14 have been properly rejected under 35 U.S.C. Section 103(a) as being unpatentable over Oare et al., U.S. 5,871,600 (Oare '600) in view of Vulcuren Trial Product KA 9188 Brochure (Vulcuren) and Freeman et al., U.S. 5,494,091 (Freeman '091)

The second issue before the Board of Patent Appeals and Interferences is whether claim 17 has been properly rejected under 35 U.S.C. Section 103(a) as being unpatentable over Oare et al., U.S. 5,871,600 (Oare '600) in view of Vulcuren Trial Product KA 9188 Brochure (Vulcuren), Freeman et al., U.S. 5,494,091 (Freeman '091), and further in view of Saneto et al., U.S. 5,158,627 (Saneto '627).

## **Argument**

### **First Ground of Rejection: Claims 1, 4-6, and 8-14**

Claims 1, 4-6, and 8-14 as a group have been rejected under 35 U.S.C. §103(a) as being unpatentable variously over Oare et al., U.S. 5,871,600 (Oare '600) in view of Vulcuren Trial Product KA 9188 Brochure (Vulcuren) and Freeman et al., U.S. 5,494,091 (Freeman '091).

In relevant part to the presently amended claims, Oare '600 teaches a tire insert comprising a rubbery polymer (column 16, lines 41-61), filler (column 17, lines 37-54), and 0.5 to 8 phr of sulfur, alternatively 3 to 5 phr sulfur (column 18, lines 15-19). As acknowledged by the Examiner, Oare '600 does not fairly teach nor make obvious the use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane in a tire insert. To provide for this shortcoming of Oare '600, the Examiner proposes that Vulcuren exemplifies 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane as being a well-known vulcanizing agent for rubber, and that Vulcuren further teaches that 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane provides for improved properties, including modulus, hardness, and hysteresis. The Examiner states that the motivation to combine is that use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane gives "highly reversion-stable vulcanizates", i.e., reversion resistance is obtained.

To establish a *prima facie* case of obviousness, the PTO must satisfy three requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. *See Karsten Mfg. Corp. v. Cleveland Gulf Co.*, 242 F.3d 1376, 1385, 58 U.S.P.Q.2d 1286, 1293 (Fed. Cir. 2001) ("In holding an invention obvious in view of a combination of references, there must be some suggestion, motivation, or teaching in the prior art that would have led a person of ordinary skill in the art to select the references and combine them in the way that would

produce the claimed invention."); *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352, 48 U.S.P.Q.2d 1225, 1232 (Fed. Cir. 1998) (a showing of a suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding"). *Northern Telecom v. Datapoint Corp.*, 908 F.2d 931, 934, 15 U.S.P.Q.2d 1321, 1323 (Fed. Cir. 1990) (It is insufficient that the prior art disclosed the components of the patented device, either separately or used in other combinations; there must be some teaching, suggestion, or incentive to make the combination made by the inventor."); *Abbott Laboratories v. Syntron Bioresearch, Inc.*, 334 F.3d 1343, 67 U.S.P.Q.2d 1337 (Fed. Cir.), *reh 'g denied*, 2003 U.S. App. LEXIS 17605 (2003) ("Knowledge in the prior art of every element of a patent claim, however, is not of itself sufficient to render claim obvious. The issue is whether substantial evidence supports the judgment (under the clear and convincing evidence standard) that a person having ordinary skill in the art would not have been motivated to replace the [prior art process] with [the process of the invention]."). The teachings or suggestions, as well as the second requirement, expectation of success, must come from the prior art, not applicant's disclosure. *See In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991).

Second, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. In other words, a hindsight analysis is not allowed. *See Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1209, 18 U.S.P.Q.2d 1016, 1023 (Fed. Cir. 1991) (While the idea of using a monkey gene to probe for a homologous human gene may have been "obvious to try," many pitfalls existed that would have eliminated a reasonable expectation of successfully obtaining the EPO gene. "Hindsight is not a justifiable basis on which to find that ultimate achievement of a long sought and difficult scientific goal was obvious."); *In re Erlich*, 3 U.S.P.Q.2d 1011, 1016 (Bd. Pat. App. & Int. 1986) ("at the time the invention was made, one of ordinary skill in the art would have been motivated to produce monoclonal antibodies

specific for human fibroblast interferon using the method of [the prior art] with a reasonable expectation of success.").

Lastly, the prior art reference or combination of references must teach or suggest all the limitations of the claims. *See In re Wilson*, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970) ("All words in a claim must be considered in judging the patentability of that claim against the prior art.").

Motivation to combine references may be lacking when the state of the art at the time of the invention in question was discovered pointed researchers in a different direction than the inventor proceeded. Indeed, the Federal Circuit has repeatedly recognized that proceeding contrary to the accepted wisdom in the art represents "strong evidence of unobviousness." *In re Hedges*, 783 F.2d 1038, 1041, 228 U.S.P.Q. 685, 687 (Fed. Cir. 1986); *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1552, 220 U.S.P.Q. 303, 312 (Fed. Cir. 1983)(prior art teaching that conventional polypropylene should have reduced crystallinity before stretching and should undergo slow stretching led away from claimed process of producing porous article by expanding highly crystalline PTFE by rapid stretching); accord *In re Fine*, 837 F.2d at 1074, 5 U.S.P.Q.2d at 1599.

Applicant urges that in view of the current amendments to the claims, a *prima facie* case of obvious is not established. For reasons stated herein, the asserted combination of references does not teach nor make obvious a runflat tire as recited in the claims. Specifically, the references do not teach nor make obvious the use of a runflat tire having at least one insert comprising a rubbery polymer, from about 10 phr to about 130 phr of a filler, 1.5 to 6 phr of sulfur, and 0.5 to 5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane.

Applicant urges that no motivation exists to combine the references. Oare '600 (as well as Freeman '091) is directed to a tire having a runflat insert. Nowhere do these references teach nor suggest the use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane in a rubber

composition suitable for use in a runflat insert, let alone 0.5 to 5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane with 1.5 to 6 phr of sulfur. Vulcuren is directed to use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane in rubber. Nowhere does Vulcuren teach nor suggest the use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane in a runflat insert, let alone 0.5 to 5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane with 1.5 to 6 phr of sulfur. Nor does the Examiner provide evidence that one skilled in the art would know, based on the general teaching in the art, that a reversion resistant runflat insert could be obtained by using 0.5 to 5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane with 1.5 to 6 phr of sulfur. Such an assertion is taught nowhere but in the present specification, and such a proposed modification would be impermissible hindsight reconstruction of the claims, based on the teaching of the present specification. Applicant urges that since no motivation to combine exists, no *prima facie* case of obviousness is established.

Applicant further urges that, even if combined, no expectation of success exists for the proposed combination, and the proposed combination does not result in the present claims.

Initially, Applicant notes that Vulcuren teaches nothing regarding the actual rubber properties obtainable using 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane. Vulcuren teaches only that rubber containing 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane will show better retention of properties as a result of the reversion resistance of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane (page 3, "Vulcanisate Properties"). Upon reading Vulcuren, one skilled in the art would not understand that rubber containing 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane would show improved properties; rather, one skilled in the art would understand that the rubber would show better retention of properties, i.e., reversion resistance.

Moreover, Applicant urges that, based on the teaching of Vulcuren, one skilled in the art would not expect that Oare '600 could successfully be modified through combination with



Vulcuren to obtain the desired reversion resistance. Vulcuren teaches that 0.5 to 3 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane can be used with sulfur (page 2, "Dosage"). Specifically, Vulcuren teaches that 2.5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane may be used with 0.5 phr of sulfur (Fig. 1), and that 7 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane should be used with no sulfur. Vulcuren teaches that 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane should be used with little or no sulfur, i.e., from about 0 to about 0.5 phr. Upon reading Vulcuren, one skilled in the art would understand that a low sulfur concentration should be used to obtain the reversion resistant qualities of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane. Oare '600, however, requires that 0.5 to 8 phr of sulfur be used, or preferably 3 to 5 phr. Based on this, one skilled in the art would not expect to obtain the desired reversion resistance of Vulcuren in the insert of Oare '600, since Oare '600 requires too high a sulfur content. Applicant urges that since no expectation of success is present, no *prima facie* obviousness is established.

One skilled in the art would not look to Oare '600 for a suitable sulfur concentration to use with 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane. If, as suggested by the Examiner, the motivation to combine Oare '600 with Vulcuren is to obtain the reversion resistance of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane, then one skilled in the art would look to Vulcuren for the relevant teaching. Oare '600 is silent with regard to 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane. If one skilled in the art were attempting to obtain reversion resistance through the use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane, he would resort to a reference that actually discusses the use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane, such as Vulcuren. However, Vulcuren teaches that little or no sulfur should be used with 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane. Thus, based on a motivation to obtain better reversion resistance, a combination of Oare '600 with Vulcuren would result in an insert having 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane

and little or no sulfur, e.g., from 0.5 to 7 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane and from 0 to 0.5 phr of sulfur.

By contrast, the present claims recite from 0.5 to 5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane with 1.5 to 6 phr of sulfur. The recited sulfur concentration is much higher than that taught by Vulcuren. Thus, a combination of Oare '600 with Vulcuren does not result in the present claims. Applicant urges that for this reason, a *prima facie* case of obviousness is not established.

Further, since Vulcuren teaches the use of little or no sulfur to obtain the desired reversion resistance of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane in rubber, Vulcuren teaches away from the proposed combination of Oare '600 with Vulcuren. A combination resulting in the present claims would require a higher sulfur concentration, for example 0.5 to 8 phr or 3 to 5 phr as taught in Oare '600. However, Vulcuren teaches that the sulfur content should be little or none, e.g., 0 to about 0.5 phr. Thus, Vulcuren teaches away from the proposed combination of Oare '600 and Vulcuren, and a *prima facie* case of obviousness is not established.

With reference to the attached Figure A, Applicant further elucidates that Vulcuren teaches away from the present claims. Figure A illustrates the region of sulfur and 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane concentration ranges defined by the claims and by Vulcuren. As would be readily apparent to one skilled in the art, the region defined by Vulcuren is clearly distinguishable from the region defined by the claims. Vulcuren clearly teaches away from the use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane in the sulfur concentrations recited in the claims. Applicant again urges that *prima facie* obviousness has not been established.

As the Examiner correctly notes, Vulcuren exemplifies sulfur at 0.5 phr and 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane at 2.5 phr (example a in Figure A), and sulfur

at 0 phr and 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane at 7 phr (example b in Figure A). Vulcuren further teaches a recommended range of 0.5 to 3 phr for 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane. Given these teachings, the smaller shaded area illustrates what Vulcuren teaches one skilled in the art about the use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane with sulfur. Vulcuren teaches nothing about the use of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane at sulfur concentrations greater than 0.5 phr. The Examiner notes that Vulcuren appears to illustrate an inverse relationship between the amount of sulfur and 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane. Even if this is true, the teaching of Vulcuren is still distinguishable from the claims, and in fact teaches away from the claims. The dashed line is included as illustrating the extension of the line between the examples. Applicant does not assert that this particular inverse relationship is fully representative of the actual relationship; nevertheless, this simple construction illustrates the clear distinction between the concentration regions defined by the claims and by Vulcuren. Clearly, Vulcuren would not suggest the combined concentrations ranges of sulfur and 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane recited in the claims, and in fact teaches away from these combined ranges. Based on this teaching away of Vulcuren (and the illustration of Figure A), one skilled in the art would have no expectation of success in combining Oare with Vulcuren. Clearly, no *prima facie* obviousness has been established.

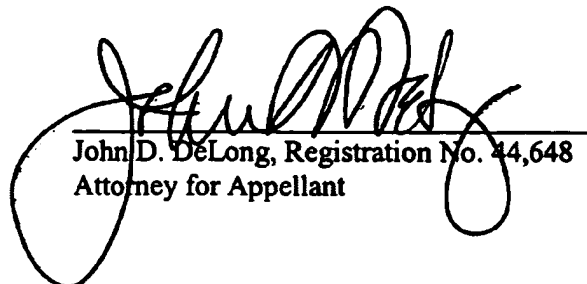
#### Second Ground of Rejection: Claim 17

Claim 17 has been rejected under 35 U.S.C. §103(a) as being unpatentable variously over Oare et al., U.S. 5,871,600 (Oare '600) in view of Vulcuren Trial Product KA 9188 Brochure (Vulcuren), Freeman et al., U.S. 5,494,091 (Freeman '091), and Saneto et al., U.S. 5,158,627 (Saneto '627).

Applicant urges that all arguments applied to claims 1, 4-6, and 8-14 apply equally to claim 17, and that claim 17 is therefore patentable over the cited art.

Based upon the foregoing, Appellant respectfully requests reconsideration of the pending claims and earnestly solicits a reversal of the Examiner's Final Rejection.

Respectfully submitted,



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## WHAT IS CLAIMED IS:

1. A runflat tire which is comprised of a generally toroidal-shaped carcass with an outer circumferential tread, two spaced beads, a radial structure having at least one ply extending from bead to bead and sidewalls extending radially from and connecting said tread to said beads; wherein said tread is adapted to be ground contacting, and said sidewalls contain at least one insert radially inward from said ply and wherein the insert is comprised of a rubbery polymer, from about 10 phr to about 130 phr of a filler, 1.5 to 6 phr of sulfur and 0.5 to 5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane.

2.(cancelled)

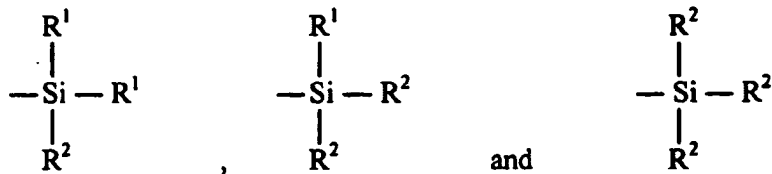
3.(cancelled)

4. The runflat tire of claim 1 wherein said rubbery polymer is selected from the group consisting of natural rubber, neoprene, polyisoprene, butyl rubber, halobutyl rubber, polybutadiene, styrene-butadiene copolymer, styrene/isoprene/ butadiene rubber, isoprene/butadiene rubber, methyl methacrylate-butadiene copolymer, isoprene-styrene copolymer, methyl methacrylate-isoprene copolymer, acrylonitrile-isoprene copolymer, acrylonitrile-butadiene copolymer, EPDM, a rubber coupled with a group IVa metal and mixtures thereof.

5. The runflat tire of claim 1 wherein from 0.5 to 20 phr of a sulfur containing organosilicon compound is present and is of the formula:



in which Z is selected from the group consisting of



Where  $R^1$  is an alkyl group of 1 to 4 carbon atoms, cyclohexyl or phenyl;  $R^2$  is alkoxy of 1 to 8 carbon atoms, or cycloalkoxy of 5 to 8 carbon atoms; Alk is a divalent hydrocarbon of 1 to 18 carbon atoms and n is an integer of 2 to 8.

6. The runflat tire of claim 3 wherein said filler is silica.
7. (cancelled)
8. The pneumatic tire of in claim 4 wherein the group IVa metal is selected from the group consisting of tin, lead, germanium and silicon.
9. The pneumatic tire of claim 3 wherein the filler is carbon black.
10. The pneumatic tire specified in claim 3 wherein the filler is present at a level which is within the range of about 35 phr to 65 phr.
11. The pneumatic tire of claim 8 wherein the rubber coupled with a Group IVa metal is selected from the group consisting of styrene-butadiene rubber, polybutadiene rubber, polyisoprene rubber, and styrene-isoprene-butadiene rubber.
12. The pneumatic runflat tire of claim 1 wherein said at least one insert is substantially crescent-shaped and is juxtapositioned to and axially inward of at least one of said carcass plies in each of said sidewalls of the tire.
13. The runflat tire of claim 1, wherein said pneumatic radial ply runflat passenger tire having a tread, a casing with two sidewalls, two annular beads, a radial ply structure extending between the two annular beads and a belt structure located between the tread and the radial ply structure, radial ply structure is comprised of: (a) an inner radial ply having metal reinforcement cords capable of supporting compressive loads under runflat operating conditions; (b) an outer radial ply having organic fiber reinforcement cords capable of supporting tensile loads under runflat operating conditions; and (c) an insert having a neutral bending axis therethrough, the insert being circumferentially disposed between the inner and outer radial plies and in a flex area of each sidewall, such that the neutral bending axis is

located further from the outer ply under runflat operating conditions for reducing the flexure of the sidewall.

14. A runflat tire which is comprised of a generally toroidal-shaped carcass with an outer circumferential tread, two spaced beads, a radial structure having at least one ply extending from bead to bead and sidewalls extending radially from and connecting said tread to said beads; wherein said tread is adapted to be ground contacting, and said sidewalls contain at least one insert radially inward from said ply and wherein said at least one insert is comprised of a rubbery polymer including syndiotactic 1,2-polybutadiene, from about 10 phr to about 130 phr of a filler, 1.5 to 6 phr of sulfur, and 0.5 to 5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane.

15.(cancelled)

16.(cancelled)

17. A runflat tire which is comprised of a generally toroidal-shaped carcass with an outer circumferential tread, two spaced beads, a radial structure having at least one ply extending from bead to bead and sidewalls extending radially from and connecting said tread to said beads; wherein said tread is adapted to be ground contacting, and said sidewalls contain at least one insert radially inward from said ply and wherein said at least one insert is comprised of, per 100 parts by weight of elastomer (phr):

from 20 to 50 phr of natural rubber;

from 50 to 80 phr of a masterbatch of cis 1,4 polybutadiene and syndiotactic 1,2 polybutadiene;

from 0.5 to 5 phr of 1,6-bis(N,N'-dibenzylthiocarbamoyldithio)-hexane;

from 10 to 130 phr of a filler selected from carbon black and silica; and

from 1.5 to 6 phr of sulfur.

18.(cancelled)

19.(cancelled)

Figure A

